PICEAS – Pacific Island Cetacean and Ecosystem Assessment Survey
Weekly Report, October 27 – November 2, 2005

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Another quiet week on the marine mammal sighting front, as we continued to work our way through more rough seas and high winds. Somewhere out here, we know there are calmer seas, and we will find them! Cetacean sightings this week included spinner dolphins, striped dolphins, a mixed spinner/spotted dolphin school, and a small mixed group of bottlenose dolphins and false killer whales. Some of the dolphin groups allowed us to approach close enough for photos (see below). Although seas were mostly too rough to try for biopsies, the bottlenose dolphins decided to be friendly and came to ride the bow. We tried for biopsies, but the dolphins took off before we could get a sample. The false killer whales that were with them followed alongside the ship at a safe distance, out of reach of our biopsy darts.

Southwestern spinner dolphins, *Stenella longirostris* (Photo by Chris Cutler)

Special thanks this week to our stewards, Art and Ray, for hosting pizza and ice cream night on Halloween! And compliments to everyone who came in costume – they were all great! We are now two days away from our stop at Palmyra Atoll, and everyone is greatly looking forward to visiting this beautiful island and getting a much-deserved break from the rough seas. We hope to find spinner dolphins, false killer whales, and perhaps some other species as we approach the island. Tune in again next week to see how we fared!

Marine Mammal Sighting Summary

102705	0730	N16:20.65 W161:57.89	82.2 nmi	5.4
	1812	N14:53.79 W162:58.11		
102805	0658	N13:47.84 W163:43.38	88.4 nmi	5.1
	1806	N12:25.19 W164:44.76		
102905	0709	N11:14.47 W165:29.97	109.2 nmi	5.0
	1832	N09:41.63 W166:34.11		
103005	0656	N08:34.98 W166:09.35	94.1 nmi	4.7
	1814	N09:55.83 W165:01.43		
103105	0655	N10:12.53 W163:46.73	97.6 nmi	4.9
	1813	N11:39.83 W162:44.50		
110105	0644	N11:24.20 W161:41.60	84.9 nmi	5.2
	1732	N12:40.55 W160:47.99		
110205	0730	N11:26.84 W160:29.08	81.6 nmi	5.3
	1812	N10:05.52 W161:23.86		

CODE	SPECIES	TOT#
002	Stenella attenuata (offshore)	1
003	Stenella longirostris (unid. subsp.)	1
013	Stenella coeruleoalba	1
018	Tursiops truncatus	1
033	Pseudorca crassidens	1
101	Stenella longirostris (southwestern)	2
177	unid. small delphinid	1
	TOTAL	8

Biopsy Weekly Report (Suzanne Yin and Mark Deakos)
No biopsies.

Photo-ID Weekly Report (Chris Cutler and Beth Goodwin)

	Weekly Total	**Cruise Total**
Humpback whale fluke IDs	0	4
Bryde's whale	0	4
Melon-headed whale (# groups)	0	4
False killer whales (# groups)	1	4
Pilot whales (# groups)	0	13
Striped dolphins (# groups)	0	3
Spotted dolphins (# groups)	0	4
Spinner dolphins (# groups)	3	8
Fraser's dolphins (# groups)	0	2
Killer whales (# groups)	0	1
Risso's dolphins (# groups)	0	1
Rough-toothed dolphins (# groups)	0	1
Bottlenose dolphins (# groups)	1	1

Acoustics Squeakly Report (Shannon Rankin & Jen Pettis)

The first two days of this week we were using an abused array with which we are unable to localize on animals. One day we were able to confirm that there were no animals in this ocean, and the next day we were able to detect (but not localize) a group of striped dolphins and a mixed group of *Pseudorca* and *Tursiops*, in addition to a distant sperm whale and three unidentified dolphin groups. After we were able to fix our backup array, we had yet another two days to confirm the ocean was deserted, and then we had several exciting days including a group of spinner dolphins, a mixed group of spotted and spinner dolphins, as well as five groups of unidentified dolphins. This week marked the longest run of functional equipment I have had since leg two: Five full days with a functional array. This miracle was no doubt connected with the capture of the vile and malicious gremlin on All Hallow's Eve... (see photo at right) but alas, this gremlin is not working alone (stay tuned next week for more of the same!).

Seabirds (Michael Force and Sophie Webb)

It was another outstanding week for the seabird team. Although we didn't have any 20 species days, our daily average this week was a respectable 12 to 13 species; only once did we dip below 10. Moreover, the species total was an impressive 27. Based on these broad generalizations, this week shares in common with previous weeks characteristics of low abundance and high diversity. Hidden within these broad generalizations are species–specific shifts (reflecting seasonal change?) For instance, Wedge-tailed Shearwater, formerly our second most abundant species after Sooty Tern, has become exceedingly scarce. On some days, we saw less than 10, whereas 50 or more was typical during the last couple of months. Even within feeding flocks, Wedgies (as they are affectionately known) have declined by several orders of magnitude. Black-winged Petrels, on the other hand, had their best week ever—several hundred of these attractive Pterodromas were seen this week—easily a record. In fact, Black-wings were our second most abundant bird

Black-winged Petrel (*Pterodroma nigripennis*);
the avian darling of PICEAS (photo: Sophie Webb)

seen during the strip transect (excluding feeding flocks). Even though they've been seen almost every day for the past couple of months, they were never this abundant. It's hard to know what's going on with this species. Are they migrating south, or is it just a result of sampling bias? Juan Fernandez Petrel also increased, being seen almost every day, sometimes in double digits. Noteworthy sightings this week include Sanderling, and Collared, Kermadec and Tahiti Petrels.

Oceanographic Data Collections (Mindy Kelley, Lacey O'Neal and Scott Benson)

DATE RANGE	DAY	CTD	XBT	Bongo	Manta	Comments
PICEAS05 Leg4 10/27 to 11/2	Thursday	2	3	1	1	
	Friday	1	4	1	0	High winds
	Saturday	2	3	1	1	
	Sunday	2	3	1	1	
	Monday	2	3	1	0	High winds
	Tuesday	2	3	1	0	High winds
	Wednesday	2	3	1	0	High winds
	Totals	**13**	**22**	**7**	**3**	

This was again another fascinating week for the oceanography team. We observed interesting changes in thermocline depth, sea surface salinity, and surface temperatures as well as net tow samples. As we headed south along the trackline, sea surface temperatures began to rise from a warm 27.00°C to 28.11°C. Along with the changing sea surface temperatures, there was the changing thermocline depth evident in both the CTD and XBT profiles. At the start of the week the thermocline was around 100 meters. As the week went on the depth became more and more shallow, coming up to 50 meters (from 100m) and finally a shallow 39 meters. Some of these XBT casts began to look more like casts conducted within the eastern tropical Pacific with the exception that they still maintained a very steep thermocline (200 meters). Sea surface salinity was yet another variable that demonstrated change. On October 30th, the three o'clock surface sampling introduced us to lower salinity values of 33ppt (dropping from 34.19 to 33.72ppt within 3 hours) and held steady for the day. The CTD profile confirmed these values and gave us security in knowing that the numbers were true.

These changes may be the product of sea surface activity occurring between the North Equatorial Current (NEC) and the North Equatorial Countercurrent (NECC). Sea surface height (Image 1) shows evidence of northward meandering of the NECC toward the NEC (our approximate track line is also shown, but note it contains one erroneous point). This image is a composite of a nine day time period. It displays sea surface height for the time during which we were sampling within the circled area (thanks to Dave Foley – SWFSC/ERD).

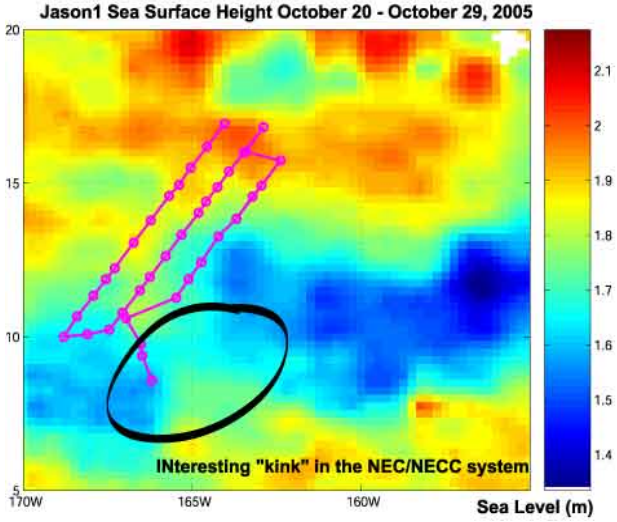

Image 1: Sea surface height

Image 2: *Periphylla* sp. (photo by Mindy Kelley).

In this area, we also collected the most interesting net tow samples for the week. The most noteworthy animal is pictured in Image 2. This animal looks to belong to the Periphyllidae family and identifies with the description of *Periphylla periphylla* (Order Coronatae). It is an abundant and widely distributed scyphomedusa that typically occurs in deep waters (~900m), with juveniles shallower and larger specimens deeper. Adults reach up to about 20cm in length, and Scott has been contemplating whether this might be an important prey item for leatherback turtles in this area. This is an exciting find, which will be analyzed in more detail after the cruise.

For the next week, we look forward to heading south through these interesting features once again before arriving at Palmyra.

Flyingfish Report (Scott Benson, Jim Cotton, Chris Cutler and Shannon Rankin)

Our efforts at the rail this week produced only as many species as there were dippers in the lineup, n = 4. The net take was a paltry 19 specimens as high winds, rain and large swells preempted two of our dipping stations. Once again the two winged variety (Exocetus) was the most frequently seen and caught flyingfish followed by juvenile specimens from two genera of the four winged variety (Hirundichthys and Prognithys). There are at least three species of flyingfish that we've photographed during our daily vigil on the flying bridge that have not shown up at our night stations, and the lure of catching these guys keeps us coming back for more. Stay tuned for next week's report on our dipping session near Palmyra Atoll as it promises to be gooood!


Flying fish species seen on flying bridge, not capture during evening dip netting (Photo: Jim Cotton).